

NOVEL REGULATORY B CELLS FOR TREATMENT OF CANCER AND AUTOIMMUNE DISEASE

SUMMARY

Cancer cells have been found to directly activate resting B cells to form suppressive regulatory B cells (tBregs) and utilize them to evade immune surveillance and mediate metastasis. tBregs directly inhibit CD4+ and CD8+ T cell activity in a cell contact-dependent manner, induce FoxP3+ T cell activity, and promote Treg-dependent metastasis. The National Institute on Aging's Immunotherapeutics Unit, is seeking parties interested in licensing or co-development of regulatory B cells to control autoimmune diseases and strategies that inactivate tBregs to control cancer immune escape.

REFERENCE NUMBER

E-101-2010

PRODUCT TYPE

- Therapeutics
- Vaccines

KEYWORDS

- Immunotherapeutic
- suppressive regulatory B cells
- immunotherapy
- tBregs

COLLABORATION OPPORTUNITY

This invention is available for licensing and co-development.

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DESCRIPTION OF TECHNOLOGY

The manner by which cancers evade the immune response is not well-understood. What is known is that the manner is an active process that regulates immune responses employing at least two types of suppressive cells, myeloid-derived suppressive cells and regulatory T cells (Tregs), a key subset of CD4+ T cells that controls peripheral tolerance to self- and allo-antigens. Tregs are considered to play a key role in the escape of cancer cells from anti-tumor effector T cells.

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Researchers from the [National Institute on Aging \(NIA\)](#), NIH, have developed methods for the generation of tBregs, and for using tBregs to produce Tregs, and methods that inactivate or deplete tBregs. These methods have significant therapeutic value in the combat with cancer immune escape and metastasis, and in the control of harmful autoimmune diseases.

POTENTIAL COMMERCIAL APPLICATIONS

- Production of cellular cancer vaccines
- Treatments for immune-mediated disorders
- Treatments for cancer
- Treatments for chronic viral infections

INVENTOR(S)

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DEVELOPMENT STAGE

- Pre-clinical (in vivo)

PATENT STATUS

- **U.S. Issued:** US 9,228,171 (05Jan2016)

THERAPEUTIC AREA

- Cancer/Neoplasm